

# FIRST light

## Fornax 10 LighTrack II mobile tracking mount

Light by name and light by nature, this mount is great for astronomy on the go

WORDS: STEVE RICHARDS

### VITAL STATS

- Price £399.99
- Payload capacity <5kg
- Latitude adjustment  
Adjustable wedge required
- Tracking rates  
Sidereal, 0.5x sidereal, solar and lunar
- Power requirements  
12V DC
- Autoguider port ST-4 (non-standard connector)
- Extras DC adaptor, polarscope collar
- Weight 1.28kg
- Supplier  
365Astronomy
- www.365astronomy.com
- Tel 020 3384 5187

The quest for accurate but portable tracking mounts suitable for imaging from remote locations or while on holiday produces an increasingly unusual range of solutions. Hungarian manufacturer Fornax's latest builds on the quirky Fornax 10 LighTrack mount, reviewed in the April 2012 issue. The LighTrack II is a much more accomplished product, having shed its original 'prototype' feel for a sleek and elegant construction.

Finished in an attractive satin silver with black trim, the LighTrack II has a high quality and substantial feel, but is both compact at 280mm in length and light at 1.28kg. The simple design has a good tactile feel and the control panel is ergonomically placed for simple operation.

It should be noted that – in common with other portable tracking mounts – you will need to budget for the necessary additional components that will be required to operate the system, these being a tripod, a ball and socket head (to attach equipment), a polarscope and an adjustable wedge (both needed to achieve polar alignment).

We used our own Manfrotto 132 tripod during the review period. It is important that the mount is polar aligned at the start of an imaging session so we used our own Manfrotto 410 geared head, which made adjustment quick and simple. For the purposes of this review, 365Astronomy lent us an

### SKY SAYS...

The LighTrack II would make an excellent travelling companion with a DSLR and a couple of lenses

EQ5 polarscope and a ball and socket head to test the mount.

Setting up is straightforward and once the mount is attached and roughly set at the correct altitude, the polarscope arm can be swung out and the polarscope attached using the supplied collar. We used

a phone app to discover the position of Polaris with regard to the north celestial pole, mirrored this in the polarscope eyepiece and finely adjusted the mount position until the position of Polaris in the polarscope view matched. Finally, we attached a DSLR camera to the ball and socket head, and pointed at our chosen object. We powered the mount from the supplied DC adaptor.

### The symphony of the night

During tracking, the mount's electronics produce an almost musical rising and falling tone when driving the quadrant arm, but this is a very subdued sound. Soon we got used to it, realising that it served as a useful indicator that tracking was progressing correctly. A few seconds before the arm reaches the end of its travel, a status light flashes as a warning that a 'rewind' is necessary. Pressing and holding the rewind button causes the arm to move back to its start position in readiness for the next cycle, at which point it is necessary to reposition the camera and telescope or lens to point at the original target again. ▶

### A MOUNT WITHOUT GEARS

The vast majority of driven mounts use a worm gear to give a large torque but very low rotational speed, with typical amateur astronomy worm gears completing one revolution every eight minutes or so. Despite these advantages, there are disadvantages too in the form of periodic error introduced by minor tolerance errors in the meshing of the gears, which cause the mount to speed up and slow down minutely during the course of a cycle or 'period'. The

requirement for lubrication in the form of grease introduces some backlash as well.

The LighTrack II dispenses with a geared system and uses a friction drive instead. The drive system comprises a motor and spindle that drives against the flat edge of a quadrant shaped plate that forms a small section of a virtual circle. With no gears to mesh and no grease to compress, a friction drive can be produced that achieves very smooth tracking. Our tests indicated that the mount could track for one hour and 48 minutes at sidereal rate before requiring a 'rewind' to the start position, which took just 12 seconds to complete.

See an interactive 360° model of this mount at [www.skyatnightmagazine.com/LighTrackII](http://www.skyatnightmagazine.com/LighTrackII)



### BUILT-IN CONTROLS

The instrument panel is neatly displayed on the front of the mount and has simple buttons and LED indicators for each function. The four tracking rates are sidereal, lunar, solar and half-sidereal, and these can be used in both the northern and southern hemispheres. There are also two buttons for resetting the quadrant.



### CAMERA MOUNT

There is no declination axis on a tracking mount like this, so the telescope or camera has to be attached to an adaptor that allows the imaging system to be pointed anywhere in the sky. The simplest method is to use an adjustable ball and socket head that fixes to the tripod bolt on the top of the mount.

### CONNECTIONS

The mount has an absolute minimum of connections, making it very quick to set up. A 12V power socket that can be fed from a portable battery or the supplied DC mains adaptor is accompanied by a non-standard connection for autoguiding. This supports the industry standard ST-4 protocol but requires a custom lead.

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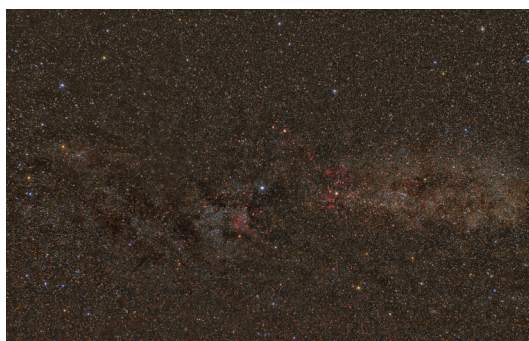
## TRIPOD MOUNTING

On the apex of the mount's rear is a 3/8"-16 UNC-threaded hole with a standard 1/4"-20 UNC insert adaptor. This allows the LighTrack II to be attached to a range of different tripod heads; we used a Manfrotto 410 geared head, which allowed us to adjust the altitude for polar alignment.



## POLARSCOPE MOUNTING ARM

As with any equatorial tracking device, an accurate polar alignment is vital to avoid trailed stars and field rotation. The LighTrack II has a substantial polarscope arm that swings out, allowing for the insertion of a standard EQ5 polarscope. No polarscope is supplied.



▲ Cygnus captured with a Canon EOS 450D DSLR and 28mm lens; the image is a trio of three-minute exposures

► The default tracking rate is sidereal, but there is a simple selector button to switch to one of the other speeds – solar, lunar and ‘half’ (0.5x sidereal). Solar and lunar are self-explanatory, while the half rate is a pleasant extra that aids in the photographing of celestial scenes that incorporate grounded objects such as trees and buildings. This is achieved by running the mount at half-sidereal rate so that although the stars will trail somewhat, the surrounding countryside won't be as blurred as it would be at full sidereal rate, giving a good compromise. This rate can also be used to capture interesting timelapse terrestrial images by setting the mount in a horizontal position.

### The tiniest trails

The mount performed well during our tests despite pretty poor skies and very short nights. Our three-minute exposures taken through a 200mm telephoto lens exhibited a small amount



▲ A 1.3-second exposure of the Moon, Venus and Jupiter with a Canon EOS 450D DSLR using half-sidereal tracking

of star trailing, but this was only really visible when images were examined on a computer at full size. Images with shorter focal length lenses showed no trailing. There were no large excursions in the tracking and each image was of a similar quality.

The LighTrack II would make an excellent travelling companion with a DSLR camera and a couple of lenses. Its simplicity makes it suitable for beginners, although no instruction manual is included. Ⓢ

SKY SAYS...  
Now add these:

1. Tele-Optic mini wedge
2. 365Astronomy heavy-duty ball head
3. Sky-Watcher EQ5 polarscope

## VERDICT

ASSEMBLY	★★★★★
BUILD & DESIGN	★★★★★
EASE OF USE	★★★★★
FEATURES	★★★★★
TRACKING ACCURACY	★★★★★
OVERALL	★★★★★

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